

ABSTRACT

[0059] Regions of an integrated circuit are isolated by a structure that includes at least one isolating trench on the periphery of an active area. The trench is deep, extending at least about $0.5 \mu\text{m}$ into the substrate. The isolating structure prevents photons and electrons originating in peripheral circuitry from reaching the active area. Where the substrate has a heavily-doped lower layer and an upper layer on it, the trench can extend through the upper layer to the lower layer. A thermal oxide can be grown on the trench walls. A liner can also be deposited on the sidewalls of each trench. A fill material having a high-extinction coefficient is then deposited over the liner. The liner can also be light absorbent so that both the liner and fill material block photons.